

# Digital Natives and Technology Literate Students: Do teachers follow their lead?

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**Abstract:** Students are extensively using the Web 2.0 tools for various reasons, however the same is not observed by the educators. The study aims in identifying the knowledge, skills, attitudes and perceptions of future teachers in relation to Web 2.0 tools integration in the educational practice. The study focuses on the qualitative analysis even though a mixed method approach was employed. The study employed a case study methodology, mainly collecting qualitative data through in-depth interviews. The results suggest that pre-service teachers are puzzled, but not negative towards Web 2.0 tools integration. The analysis also reveals that pre-service teachers' perceptions and attitudes towards Web 2.0 tools are explained by and related to the TAM model. Finally, three teachers' profiles towards Web 2.0 tools integration were emerged and a number of suggestions are provided in an attempt to appropriately prepare pre-service teachers.

## Introduction and Theoretical Background

We get up in the morning and go on line before getting our coffee. We feel that we lose part of our brain when we are without a telephone, computer or Internet. We cannot imagine how we were searching for information before Google or any other search engine. We were using an Encyclopedia... Where we were satisfied from the results of our research? How "rich" was the material found? The Internet is a milestone in the way we communicate, work, collaborate, socialize and share information. Consequently, the expression B.G. (Before Google) is fairly used (Prensky, 2001). Google, MSN, Facebook, Search Engines, Blogs, Wikis! We are living in a digital world and for too many of us the above are part of our daily life activities and we use them on a personal, educational and professional level. Elementary and secondary students constitute a great part of this digital world.

### Digital natives and immigrants

Youth under the age of 18, born and grew up in the Information Age are characterized as digital natives (Prensky, 2001) and digital learners (Murugesan, 2009; Oliver & Carr, 2009; Richardson, 2009). The students are extensively using Web 2.0 tools in order to play internet game, visit social networking websites, use email, search for information, communicate through chat rooms, participate in blogs and discussion forums, develop their own websites, become net-writers through wikis, etc (Burnett et al., 2003; Hargadon, 2009; Murugesan, 2009). Even though youth is extensively using the new technologies, it does not mean that they use them appropriately without putting themselves in any danger. They lack the necessary knowledge and skills in order to safely, effectively and efficiently use the Web 2.0 tools (Ala-Mutka, et al., 2009; Burnett et al., 2003). On the other hand, the digital immigrants (Prensky, 2001) are those who were already grownups while the technology

and the Internet were evolving. Nevertheless, in order to survive they adjusted to the new setting, and made technology an integral part of their lives, frequently using it for various purposes: educational, personal and professional.

### **Web 1.0 and 2.0**

The Internet use has been greatly evolved the past decade and this is apparent not only by the number of various users, which is continuously increasing, but also from the types of Internet use. We all experienced Web 1.0, where as the passive “consumers” of information, we were characterized as “the public” without having any active involvement. Web 1.0 users were Reading, Receiving, Researching - the 3R's. The technological advancement in information technology and telecommunications resulted in the development of the Web 2.0 and created the appropriate framework for user participation. The traditional one-way communication is transformed to a two-way communication, and process of information. In Web 2.0 users are Contributing, Collaborating, Creating - the 3C's (Ala-Mutka et al, 2009; Hargadon, 2009; Murugesan, 2009; Richardson, 2009). Web 2.0 sets the foundation of a new era of information searching and processing.

### **Social and Educational Networking**

Millions of people use various social networks, such as Facebook, MySpace, Twitter, Delicious, Flickr, LinkedIn, Live Journal. Discussion forums, blogs, wikis, chat-rooms, electronic calendars, electronic documents (i.e google documents), etc, are some of the Web 2.0 tools employed within the social networks. The aforementioned are excellent examples of how text, views, definitions, ideas, photographs, videos and voice can be shared over a powerful Web 2.0. Having in mind the opportunities provided through the Web 2.0, and the changes in users' role, the social networking can be transformed to educational networking. The Web 2.0 tools can be applied for teaching and learning purposes towards achieving educational objectives. Various researchers (Ala-Mutka et al., 2009; Burnett, 2003; Hargadon, 2009; Murugesan, 2009; Richardson, 2009) argue that the new web will dramatically change the education of the 21<sup>st</sup> century. Specifically, it is expected that the Internet will alter the way which students approach learning, the way which teachers approach teaching and learning, and finally the way of interaction and communication among students and teachers and the way which they learn from each other.

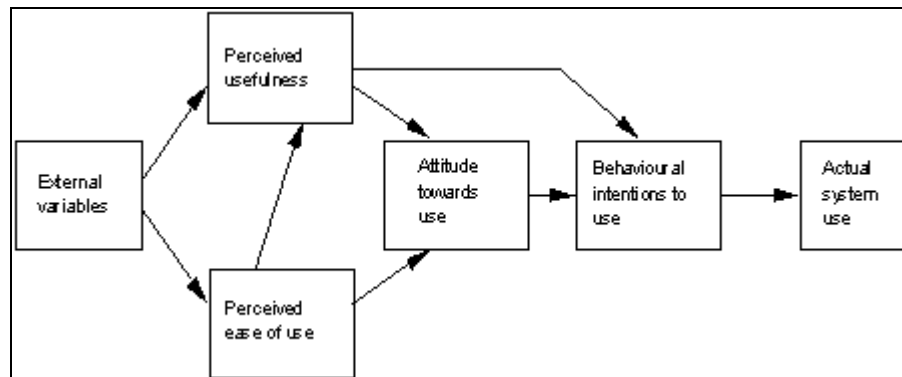
### **Technology Acceptance by Teachers**

ICT integration policy in Cyprus educational system is one of the most important innovations that took place in the past few year. The teachers are a very important aspect for the implementation and success of the innovation, thus the investigation of their perceptions and attitudes towards ICT integration is extremely significant and valuable. For example, various studies showed that positive attitudes towards technology integration predispose the users in real computer use while negative attitudes lead to avoidance of computer use (Mitra, 1008; Rozell & Gardner, 2000). Equally important is the investigation future teachers perceptions and attitudes towards ICT integration. Several studies (Ma et al., 2005; Cox et al., 1999; Hu et al., 2003) coincide in their findings and adopt the Technological Acceptance Model (TAM; Davis, 1989), suggesting that teachers' perception in regards to the usefulness of new technologies is directly related to the intention of use and indirectly with the ease of use. According to the model, user perceptions regarding the usefulness and ease of use constitute decisive factors for using technology in someone's working environment. This model has been widely used to investigate various ICT integration approaches (computer, internet, or any educational software), as well as various factors that might influence users' perceptions regarding the ease of use and usefulness, such as gender, previous experience, computer education, etc (Whitley, 1997; Seyal et al., 2000, Roussos, 2007).

TAM was specifically designed to explain individual technology acceptance/adoption decisions across a wide range of organizational contexts, computer technologies, and user populations (e.g., Davis, 1986; Venkatesh & Davis, 1996). TAM postulates that two particular beliefs, perceived usefulness and perceived ease of use, are of primary relevance for computer acceptance behaviours (see figure 1). TAM provides a basis for tracing the impact of external factors on internal beliefs, attitudes and intentions. Several researchers have been using it to address computer acceptance behaviours in different contexts and thus they have adapted it to suit these contexts (e.g., Al-Gahtani & King, 1999). Teachers' contribution is very important for the implementation and success of any innovation, thus the investigation of their perceptions and attitudes towards technology integration is extremely significant and valuable (Mitra, 1998; Rozell & Gardner, 2000). A similarly important element in the literature related to technology and education is the acceptance and actual use of technology by

school teachers. Another group of studies examined factors that affect teachers' attitudes towards computers (e.g., Roussos, 2007; Seyal, et al., 2000) and teachers' actual use of computers (e.g. Mitra, 1998; Rozell & Gardner, 2000). Studies examined the influence of numerous variable on computer use such as age, prior computer training, and computer literacy (e.g. Seyal, et al., 2000; Roussos, 2007), gender (e.g. Whitley, 1997), computer experience (e.g. Rozell & Gardner, 2000), openness to experience (Roussos & Politis, 2004; Roussos, 2007).

Equally important is the investigation of future teachers' perceptions and attitudes towards technology integration. Several studies (Ma et al., 2005; Cox et al., 1999; Hu et al., 2003) consider in their findings and adopt the Technological Acceptance Model (TAM; Davis, 1989), suggesting that teachers' perception in regards to the usefulness of new technologies is directly related to the intention of use and indirectly with the ease of use. This model has been widely used to investigate various ICT integration approaches (computer, internet, or any educational software), as well as various factors that might influence users' perceptions regarding the ease of use and usefulness (See Figure 1). Given the aforementioned information, the current study employs the model in order to examine pre-service teachers' Internet use acceptance.



**Figure 1 – The Technology Acceptance Model**

### **Teachers' Beliefs and Views towards Technology Integration**

Throughout the years, numerous reactions, beliefs, and attitudes towards technology integration in education were documented in the literature. Given the above, teachers can be categorized in four groups regarding their attitudes and beliefs towards technology. The first category includes the *supporters of technology integration* in education. Those are the educators that strongly support technology integration in education without any criticism, objection, or questioning. Nevertheless, their attitudes and beliefs are usually based on abstract principles without conducting any research or examination of the possible effects and the pedagogical principles that go along with technology integration in education. Some of the teachers also support the idea that the technological advancements are mostly positive and constitute great improvements in education. The second category is the *skepticisms*, those that disapprove and fight learning with technology. They are conservative and defensive, focusing on and highlighting the negative effects of technology in our lives, rejecting any possible positive effects of technology. They resist to the idea of even becoming digital literate themselves. Unfortunately, some of these educators hold key positions in the educational systems and participate in policy decision making processes regarding education. The third category is the educators that can be classified in between the two above categories, named as *social skepticisms* since they are characterized by a strong socio-cultural skepticism. Specifically, this category is not opposed to technology integration in education for various reasons i.e. economical, socio-cultural, and educational, realizing the positive influence of technology in our personal, educational and professional lives. However, lots of them draw attention to the threat of using technology as a mean of an invisible, but at the same time powerful social control and a social-political weakening of the human being. Usually, they focus on teachers' role as a facilitator, highlighting at the same time the need of continuous evaluation of the effects of technology integration mainly based on various social criteria. Finally, the fourth category includes those that *hold an open and positive approach towards technology integration in education*, but at the same time having an investigative and critical (not negative) attitude towards something that is new and to the new educational opportunities revealed in education in the Information and Communication Society. Educators in this group do not hesitate to develop a basic however

important, progressive and personalized digital literacy (based on their own knowledge, skills, and needs). However, their criteria for professional development are mainly pedagogical, psychological, social, political and aesthetical (Raptis & Raptis, 2004).

## **Main Aim and Research Objectives**

The study aims to identify how pre-service teachers react in regards to Web 2.0 tools integration within the educational practice by investigating their experiences, attitudes and perceptions. Moreover, it assesses pre-service teachers' readiness to function in an internet-based, high-tech environment, cope with the relatively new concepts of Web 2.0 tools and educational networking and consequently educate and prepare their students for the digital world employing the new technologies in their teaching practices. It also attempts to identify the factors that influence teachers integrating Internet technology in the educational practice. At some point the study qualitatively tests the assumptions that underlie the TAM model in regards to the Web 2.0 tools. Finally, it identifies actions to be taken through which pre-service teachers will develop the knowledge and skills needed for their profession.

## **Research Methodology**

A case study design is applied, aiming to collect qualitative data through semi-structured interviews (Kvale, 1996; Creswell, 2003) as the primary source of data in order to gain thorough understanding of pre-service teachers' attitudes and experiences. A questionnaire was also used in order to collect basic demographic data (i.e. gender, age, computer use and ownership). The study focuses on examining and conducting an in-depth analysis of a single process, which, in this case, is the use of the Web 2.0 tools within the educational environment. Frederick's University pre-service elementary teachers served as the population of the study. Specifically, 64 3<sup>rd</sup> and 4<sup>th</sup> year pre-service teachers attended the Educational Technology course, were pre-service teachers had the opportunity to learn about the Internet as an educational tool and Web 2.0 tools integration in the teaching and learning process. Various stimuli were provided throughout the course concerning Web 2.0 tools in the educational practice (i.e. scientific articles, examples from other countries, quest speakers, in classroom practices). The pre-service teachers were also asked to develop lesson plans and perform sample lessons integrating Web 2.0 tool. The data collection process took place during Fall 2009 and Spring 2010. A questionnaire was given to the 64 participants in order to collect data for the following parameters : age, gender, computer ownership, computer use in years, hours of computer use per week, hours of Internet use per week, cumulative GPA, education (skills and knowlegde) regarding Internet use and regarding Internet use (specifically Web 2.0 tools) as an educational tool. Finally, the Greek Computer Self-efficacy Scale, GCSES (Kassotaki & Roussos, 2006), was used to assess teachers' perceptions about their computer self-efficacy. Teachers were asked to indicate how competent they felt they were in relation to: basic knowledge on the use of operational systems (e.g., MS Windows), office and internet applications, and basic concepts and dealing with simple problems related to computer use. SPSS statistical package was used to analyze the data collected from the questionnaire. The quantitative analysis results were used as the criteria to select the participants for the group-interviews.

The group in-depth interviews aimed to identify their attitudes and beliefs towards technology. Four semi-structured group interviews were conducted. Purposive sampling was used to select the 20 participants for the group interviews (Five participants in each group interview). On average the duration of each group-interview was 1 hour. Open-ended questions were included in the interview protocol in an attempt to provide the opportunity to the pre-service teachers to freely express themselves (Kvale, 1996). The interviews included questions such as: For what purposes do you use Web 2.0 tools (i.e. personal, professional, educational)? What are your impressions of the Web 2.0 tools integration within the teaching and learning process? Did you face any difficulties in learning how to use the tools? Would you use them in developing learning environments enhanced with technology? Why yes? Why not? Follow-up questions occurred naturally to clarify answers and build on the responses. The group interviews were recorded and converted to text. After transcribing the digital audio files, the researchers analyzed pre-service teachers' responses using the method of continuous comparison of data (Maykut & Morehouse, 1994). The researchers read and reread the transcriptions of the group interviews, assigning codes and classifying data into categories in order to identify emergent themes. As the analysis progressed, researchers needed to revise the coding system and the categories in order to reflect the

emerged themes related to pre-service teachers' experiences.

Seventy-four percent was women and the rest of them (26%) was men. All of them were junior (in their 3<sup>rd</sup> year of study), and their age ranged from 21 to 23 years old, 22% and 27% respectively. Almost all of them (besides one) owned a personal laptop for the past 3-5 years, using it daily for various purposes. They also use computer and the Internet 30 hours per week. Regarding Internet use training, they all attended computer lessons at high school and then through the university program of study. Additionally, they got educated on integrating Web 2.0 tools within the teaching and learning practice through the Educational Technology course at the university. Finally, given the results of the GCSSES, pre-service teachers' reported feeling competent regarding basic knowledge on the use of operational systems (e.g., MS Windows), office and internet applications, and basic concepts and dealing with simple problems related to computer use. Given the above results, the 20 pre-service teachers that participated at the interviews were chosen. Specifically, the authors attempted to have a sample balanced on the following parameters: gender, cumulative GPA, computer self-efficacy, and computer and Internet per hour use per week.

## Findings

The current proposal focuses on the qualitative analysis. It can be argued that the pre-service teachers find themselves in a transformational phase, where they neither can be characterized as digital natives, nor as digital immigrants, however their future students can be characterized as digital natives. They revealed to be puzzled about the instructional use of the Web 2.0 tools, but not negative. Fifteen of the pre-service teachers reported using some (i.e. blogs, and discussion forums) of the Web 2.0 tools on a daily basis. Given that they had only one course where they taught the use of Web 2.0 tools integration within the teaching and learning practice and even though they felt competent in using technology, the majority of them reported not being able to extensively use them in educational practice. Overall, they supported that they felt comfortable about using Web 2.0 for personal reason but not quite sure and confident on how to use it in within in-classrooms activities. Some of them mentioned that they felt an unaffordable pressure to use the Web 2.0 tools in their classroom practices and adjust to this high-tech setting, since they might not be able to follow their students, attract and motivate them. On the other hand, the majority of the teachers (14 out of 20) agreed that is a necessity to integrate the new technologies in their classroom practices. Pre-service teachers' skepticism springs from two parameters: 1) the level of their knowledge and skills as measured by the GCSSES and b) their concerns on preparing their future students to effectively and safely use the Internet for professional, educational and personal purposes. Pre-service teachers' perceptions indentified through the interviews' analysis can be explained by and are related to the TAM model. Consequently, they can be grouped in 4 categories: 1) usefulness of use, 2) ease of use, 3) pre-service teachers' readiness, and 4) value and usefulness for the students. Overall, it can be supported that the demographic data of the participant did not seem to influence their responses besides two variables, in some cases: internet use per hour per week, and computer self-efficacy.

Regarding the first category, usefulness of use, teachers reported some concerns regarding Internet usefulness for students younger than 8 years old. They do not feel that it will be that beneficial and valuable experience for this age of students. Besides the above, they expressed their concerns about the threats (i.e. inappropriate material, getting in touch with strangers, viruses, hacking, giving out personal information) that the students are exposed to when using the Internet. Additionally, they appeared to be puzzled regarding the changes in teacher-student communication. They felt that the face to face communication is being rapidly replaced through the use of various Internet tools and consequently minimizing its value. Future teachers reported that it is extremely important for them prior integrating Internet tools in their classroom practices to realize Internet usefulness in education through their courses and the teaching practice module during their studies. Specifically, they would like not only to observe Internet practical applications within the classroom, but also to have the chance to test it by themselves and integrate Internet tool in their lessons. Even at this point, future teachers appear to realize Internet usefulness. Specifically, they reported that the Internet and in general technology is a way of living, a necessity and a part of our personal, professional, educational and social lives. The various Internet tools motivate and attract students, while being at the same time a valuable educational tool if used correctly.

Future teachers' perceptions regarding the second category, Internet ease of use, appeared to be influenced by various parameters. First of all, they mentioned that they need to be appropriately prepared through their programs of study at the University in order to be able to use the Internet as an educational tool.

Along the same lines, future teachers argued that the Internet ease of use is greatly influenced by the frequency they would be using it in their classroom teaching practice while being university students. Secondly, they supported that the classroom environment and students themselves (in terms of discipline and level of digital literacy) impact Internet ease of use.

Finally, the third category of teachers' perceptions focuses on teachers' readiness in integrating Web 2.0 tools in their classroom practices. Specifically, they discussed various issues in relation to their readiness such as, the need for appropriate and in-depth preparation at the university level, the need for constant professional development training and finally the provision of motives to the teachers. They also reported that the support of the school environment and specifically, the support and help from their colleagues on a personal and professional level are extremely valuable and would highly influence their readiness. Finally, future teachers argued that their feelings while using the Internet as a tool influence their readiness. Specifically, they reported that some teachers might be stressed and tensed and some others might be feeling satisfied and pleased when using the Internet in their classroom practices. The participants strongly supported that the higher the satisfaction and pleasure given to teachers when Internet is used as a tool in the classroom, the higher the readiness for Internet use in the classroom practice. Finally, future students revealed their concerns regarding the frequency and Internet use for young students and appeared to be puzzled at the same time about the great interest for Internet use from children's behalf. They also expressed their concerns on how the Internet can be effectively and efficiently used for their own benefit, protected at the same time from the threats that exist while unconsciously using the Internet. Having in mind the above, future teachers highlighted the need to develop students' critical thinking skills for Internet use, develop their skills and knowledge about Internet uses as well as the threats that exist. Students should be educated enough in order to be able recognize Internet usefulness and appropriateness and be in position to distinguish among its use for educational, and personal purposes.

Moreover, data analysis revealed three different teachers' profiles towards Web 2.0 tools integration in the educational practice. It could be suggested that the following 3 categories derived from the analysis are highly in alignment with the categories reported by literature (Raptis & Raptis, 2004). The first group of future teachers was the positivistic ones, which can be characterized as receptive to the new challenges. Those teachers (7 out of 20) were convinced for the necessity, usefulness and value of the Web 2.0 tools. They reported not being scared and willing to give it a try. These teachers were the ones that were using the Internet the most (per hour, per week) and their computer self-efficacy was highly rated. Specifically, a future teacher mentioned "...I do not feel 100% ready; however I am 100% willing to try". This group of teachers feels that Web 2.0 tools are interesting and useful enough for the students and we need to find ways to take advantage of students' digital literacy, interest and obsession for the Internet. Finally, teachers discussed that it would be extremely important to have the opportunity through their university courses to integrate Web 2.0 tools in their classroom practices. Specifically, one teacher highlighted that "...there is a great gap from theory to practice...from what they read and being taught at the university and what they are expected to do in class". In relation to the literature, it can be suggested that this group of teachers lay somewhere between the supporters of technology and the ones that hold an open and positive approach (Raptis & Raptis, 2004). The future teachers borrow characteristics from the above two categories as described and presented in the literature.

On the other hand, the second group of future teachers (5 out of 20) appeared to be extremely hesitant. This profile can be named as the skepticisms. Specifically, they articulated great concerns that were mainly derived from their own limited digital literacy, and their non-positive perceptions towards the necessity and value of the Internet integration in the teaching and learning process. Specifically, they supported that is weird and out of the normal to have young students use the Internet, commenting at the same time that "...I have been using the Internet for only one year...". Additionally, they expressed various concerns regarding the communication among students and between students and the teacher. Nevertheless, they supported Web 2.0 integration if a number of circumstances are in place. For example, they would like to have positive feelings when using the Internet in the classroom, not being stressed and overwhelmed, and finally to get positive feedback from the students. Along the same lines, the future teachers believe that "...for an educator to integrate Web 2.0 tools needs to feel confident and be very well prepared". Finally, in alignment with the above profile, they highlighted the need to have the experience of in-classroom practical applications. Specifically, one of the mentioned "...besides the need for knowledge and skills development regarding the Web 2.0 tools.... I want to see examples and how it is applied in the classroom... I want to see positive results and students' reactions..." This group of future teacher possesses characteristics from two groups as they classified in the literature (Raptis & Raptis, 2004): the skepticisms and the social skepticisms. The above happens since future teachers appeared to be skeptical regarding Web 2.0 integration by expressing some concerns, however, they do not fight technology

integration, they have restricted literacy and finally they expressed a number of circumstances under which they would be integrating Web 2.0 tools in their classroom practices. These teachers reported using Web 2.0 tools on a weekly basis and rated their computer-self efficacy as low and medium.

In between the aforementioned profiles, there is an intermediate one that blends the two. This group of teachers (8 out of 20) embraced Web 2.0 tools integration, however they expressed some reservations. These teachers feel ready and willing to attempt Web 2.0 tools integration in their classroom practices, since they have some basic knowledge. They also mentioned having personal experiences integrating the Internet within classroom practices. They attempted several times to integrate the Internet within their classroom practices, confessing that "...most of the times it did not work for several reasons, i.e. time needed for preparation, time spent in the classroom, students' discipline issues and attitudes towards the Internet...we need some more practical applications, some more examples". Given the above, future teachers feel extremely puzzled regarding Internet integration and specifically one of them argued that "...I have some great reservations regarding Internet integration in education...it is a really good idea however there are still lots of problems and issues to be resolved...[...] students approach technology as an entertainment tool and not as an educational tool". As above, this profile of future teachers closely resembles the social skepticisms however borrowing some characteristics from the ones that hold an open and positive approach towards technology integration (Raptis & Raptis, 2004). Finally, this group of future teachers appeared to be using Web 2.0 tools on a daily basis and rated its computer self-efficacy as medium and high.

## Conclusions

From the current results of the study, it can be supported that future teachers expressed a positive attitude to the idea of Web 2.0 tools integration in their classroom practice, realizing in a degree its value, usefulness and importance. However, they do not feel ready to integrate Web 2.0 tools in the classroom since the majority is not digital "fluently enough", is not very familiar with the idea of Internet tools integration in the educational practice, and has limited experience in integrating Web 2.0 tools not only in its teaching practice but for some of them in their personal life. Along the same lines, some of them are not ready to "accept" Web 2.0 tools as educational tools and feel that is an utopia to believe that it can be integrated as a tool in the teaching and learning practice given their attitudes, skills and knowledge. All the above play an important role and can explain in a degree the aforementioned teachers' perceptions, beliefs and profiles. Consequently, it has been intensively supported by the future teachers that they need to be better educated and prepared on Web 2.0 tools integration in education. They need to further develop their Web 2.0 tools literacy level and further comprehend the value and importance of Web 2.0 tools integration in the teaching practice. Having in mind the above, various actions are suggested to take place.

First of all it would extremely influential for the future of Web 2.0 tools integration in education for an educational policy to be formed. The policy will guide and promote the theoretical and working, and practical framework of Web 2.0 tools integration and application in education in all levels (primary, secondary and higher) of the educational system and all types of institutions (i.e. public and private).

Secondly, special attention should be given by the higher educational institutions and specifically by Schools of education (Ala-Mutka, Punie, & Ferrari, 2009). It is a great necessity for Schools of Education to develop an interdisciplinary philosophy that is aligned to Web 2.0 tools integration. The above suggests that Web 2.0 tools to be applied by the lecturers and used as educational tools by the future teachers within the courses offered as well as integrated by the future teachers as educational tools in their classroom practices. More specifically, future teachers should be given the opportunity during their visits to public schools not only to observe Web 2.0 tools integration but also to integrate technology and the internet as tools when delivering a lesson. The gap between theory and practice will be further eliminated if future teachers get to experience Web 2.0 tools application in the teaching practice.

Additionally, an Educational Technology course could be offered as a specialization course in order to give future teachers the opportunity to further study and examine technology and Internet integration in the educational practice. During the interviews some of the future teachers expressed their interest for such a course, reporting that "...if it existed, I would be registered in such a course". Along the same lines, it is recommended that more courses related to Technology and Internet use in Education should be offered, such as: Specialization in Technology, Web 2.0 tools integration in Education, Technology Integration Teaching Practice.

Extremely important would also be the constant and continuous collaboration among the Universities (Schools of Education), the Ministry of Education and the Pedagogical Institute (Governmental organization related to the Ministry of Education, responsible for in-service teachers professional development training). The above collaboration should at some point relate what they learn at the University to what the Ministry requires them to cover at the national curriculum and perform in class after graduating. For example, future teachers could be directed to learn the educational software distributed by the Ministry and used in the public schools. The study reveals the importance of having the educational networking, the “anytime, anywhere” and the life-long learning to be included in the everyday routine of students. The students should be provided with those opportunities and experiences that will adequately prepare them for the rapid-changing, interconnected, high-tech, globalized society they are living in. Their teachers are one of them most influential factors to achieve the above, thus their preparation is of vital importance. Given the above, the study feeds information to policymakers, school leaders and in general educators on pre-service teachers’ preparation in order to be able to serve the public good. It is vital for the pre-service teachers to make this new learning, communication, work, and collaboration culture their own reality prior transferring it to their students (Eteokleous, 2009).

Finally, the study constitutes the foundation for further research to be conducted regarding the educational use of Web 2.0 tools, the in-depth examination of the educational networking concept and its application within the school curriculum. In addition, this study will further examine how teachers’ Web 2.0 digital literacy, personal characteristics, beliefs and pedagogical attitudes influence the use of the Web 2.0 tools in education.. The study aims to go one step further and investigate if the existing literature regarding technology integration in education is applicable to Web 2.0 tools integration in education as well. For example, the literature suggests that several factors influence teachers’ usage of computers for teaching, including external variables (such as demographic variables, end-user background variables and environmental variables) and cognitive, affective and behavioural responses (such as attitudes towards computers in general and perceptions towards computer use for teaching purposes) (see Granger et. al, (2002); Jimoyiannis & Komis, 2007; Mumtaz, 2000; Pavlou, & Vryonides, 2009; Roussos, 2007; Tondeur, van Braak, & Valcke, 2007). Does the above holds for Web 2.0 tools integration? What are the differences that exist (if they exist) and how they can be explained?

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